



History of the Pipeline Safety Regulations

Standards, Regulations, Regulatory Authority, Reauthorization





■ In 1935, the American Engineering Standards Committee published Code 31 as "An American Tentative Standard Code for Pressure Piping." Several revisions followed and in 1959, the code was separated with the publication of the American Standards Association (later ANSI) Code B31.4 for "Oil Transportation Piping Systems" - Later changed to "Liquid Petroleum Transportation Piping Systems."



On March 18, 1937, a large natural gas pipeline explosion in a schoolhouse in New London, Texas killed 298 children. As a result of that accident, Texas passed a law requiring that odorants be added to natural gas. Soon thereafter, many other states passed laws similar to the Texas odorant requirements.



■ In 1958, further changes were made to the gas piping code, then called the American National Standards Institute (ANSI) B31.8 Code "Pressure Piping, Gas Transmission and Distribution Systems."





 In 1947, the industry established the American Standards Association (ASA) B31.1 Code "Air & Gas Piping Specifications" for the design and operation of gas pipelines.





■ As a result of a spectacular accident in Rochester, NY, the gas and air piping specifications were separated with the establishment of ASA B31.1.1.8 (later shortened to ASA B31.8) "Gas Piping Specifications" in 1952.





Prior to the issuance of the federal regulations, pipeline companies followed these standards for the design, construction, and operation of pipelines. However, these standards were followed on a voluntary basis.





- During the peak period of pipeline construction (late 1950's through the mid-1960's), several states, counties, and municipalities adopted regulations for pipelines, especially for liquid pipelines, as they were built across their areas.
- Usually placed additional requirements on the lines.





■ Twenty-five of twenty-six states that had adopted pipeline safety codes for gas pipelines used the ANSI Code B31.8 "Pressure Piping, Gas Transmission and Distribution Systems."





Regulation

Because of the many conflicting local regulations, representatives from the liquid pipeline industry appeared before the Senate Commerce Committee in 1964 to request a single federal regulation.





Regulation

- In July 1965, the Interstate Commerce Commission (ICC), which had jurisdiction over transportation of explosives and other dangerous articles, brought liquid pipelines under federal government jurisdiction by amending the definition of "carrier" and by deleting the words "other than pipelines" in the scope of their authority.
- Natural gas pipelines were not affected and were allowed to continue following industry standards.





Regulation Liquids

- In January 1967, the ICC issued a Notice of Proposed Rulemaking (NPRM) to add Part 80 to the Code of Federal Regulations (CFR).
- These new regulations covered accident reporting and additional rulemaking for the design, construction, maintenance, and operations of liquid pipelines. Before the ICC took final action on the notice, the authority over liquid pipelines was transferred to the DOT in April, 1967.



Regulation Liquids

■ The Federal Railroad Administration (FRA) under the DOT was given regulatory authority over any pipeline carrier transporting hazardous materials (other than water, natural, or artificial gas). In June, 1967, the FRA published Part 180 (formerly Part 80) covering accident reporting.





Regulation Liquids

- In 1969, the additional rulemaking for design, construction, operations, and maintenance were combined with Part 180 and published under the new Part 195 titled "Transportation of Hazardous Liquids by Pipeline."
- In November, 1972, the Secretary of Transportation delegated the authority for oversight of liquid pipelines to OPS.



Regulation Natural Gas

- The Natural Gas Pipeline Safety Act (NGPSA) was adopted August 12, 1968, as a result of a catastrophic gas pipeline failure that resulted in 17 deaths in Natchitoches, LA.
- Established the authority for government to oversee and regulate pipelines transporting natural gas and other gases by pipeline.



Regulation Natural Gas

- Some of the requirements established in the NGPSA included:
- An enforcement group to oversee pipelines (OPS).
- Adopt interim regulations for all gas pipelines.
- Adopt "minimum safety standards" for all gas pipelines.
- A certification process with states to oversee and enforce the regulations for gas pipelines within that state.
- Enforcement actions and civil penalty limits.
- Technical Pipeline Safety Standards Committee (TPSSC).





Regulation Gas Pipelines

- In November, 1968, OPS issued a new regulation for gas pipelines: Part 190, "Interim Federal Standards." Part 190 incorporated or adopted the existing ASME B31.8 standard, "Gas Transmission and Distribution Piping Systems."
- In January, 1970, OPS issued Title 49 CFR Part 191, which governed reporting requirements for gas pipeline operators.
- On August 11, 1970, OPS removed Part 190 and published the first issue of Part 192, titled "Transportation of Natural and Other Gas by Pipeline; Minimum Federal Safety Standards."



Regulation Hazardous Liquids

■ Even though OPS was given jurisdictional responsibility over liquid pipelines in 1972, the law was written in such a way that it limited both the enforcement of the regulations and the capability for the state pipeline programs to inspect and enforce Part 195 for intrastate liquid pipelines. Thus, all inspections of liquid pipelines fell under OPS and its regional offices.



Regulation Hazardous Liquids

During the mid-1970's, OPS continued to develop and make changes to Part 195, but did not exercise strong enforcement of the regulations until November, 1979, when Congress passed the "Hazardous Liquid Pipeline Safety Act of 1979 (HLPSA)."







- Some of the requirements established in the HLPSA included:
- The specific authority of OPS over liquid pipelines.
- The definition of "intrastate" versus "interstate" hazardous liquid lines.
- A certification process available for states to oversee and enforce the regulations for liquid pipelines within that state.
- Enforcement actions which can be taken by OPS.
- Civil penalty limits.
- Establishment of the Technical Hazardous Liquid Pipeline Safety Standards Committee (THLPSSC).



Authority

- Administered by the Pipeline and Hazardous Materials Safety Administration (PHMSA) established on February 20, 2005.
 - The Office of Pipeline Safety (OPS), under PHMSA, has the enforcement authority over pipelines that operate in the U.S.
 - Result of congressional interest and heightened awareness





Authority

- Previously, OPS was under the Research and Special Programs Administration (RSPA).
 - Established by the Secretary of Transportation in 1977 as the operating administration for those programs that did not fit into the more narrowly defined missions of the existing department modal administrations.







Reauthorization

■ When an Act is passed by Congress, there are time limits tied to the funds that are authorized to be spent by an agency. So, periodically Congress must revisit the laws that they have passed and either reauthorize them or let them expire.





Reauthorization

Both the NGPSA and HLPSA have been reauthorized several times since they were originally passed. In each new reauthorization, additions and deletions have been made to the original Act.





Reauthorization

- Some of these additions have been the requirement to develop new regulations or to conduct studies to see if additional regulations may be required.
- These changes have been prompted from several different sources - from within Congress, from the general public, and several based upon NTSB findings and recommendations.



Transportation Act

■ In 1994, Congress repealed all of the individual transportation Acts and compiled them into a single Act (Public Law 103-272) to incorporate all modes of transportation. Subtitle VIII for pipelines combined the requirements of the NGPSA and the HLPSA into one document.

PUBLIC LAW 107-355-DEC, 17, 2002

116 STAT, 2985

Public Law 107-355 107th Congress

An Act

To amend title 49, United States Code, to enhance the security and safety of

Dec. 17, 2002 [H.R. 3609]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Improvement Act

SECTION 1. SHORT TITLE; AMENDMENT OF TITLE 49, UNITED STATES

(a) SHORT TITLE.—This Act may be cited as the "Pipeline Safety 49 USC 60101

Improvement Act of 2002". (b) AMENDMENT OF TITLE 49, UNITED STATES CODE.—Except as otherwise expressly provided, whenever in this Act an amendment or repeal is expressed in terms of an amendment to, or a repeal of, a section or other provision, the reference shall be considered to be made to a section or other provision of title 49. United States Code.

Pipeline Safety



Transportation Act

■ The pipeline section of this document was not titled in 1994, but this section was reauthorized in 1996 and titled, the "Accountable Pipeline Safety and Partnership Act of 1996." This Act was reauthorized again on December 17, 2002, and titled, the "Pipeline Safety Improvement Act of 2002."

PUBLIC LAW 107-355-DEC, 17, 2002

116 STAT, 2985

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Transportation Act

- Pipeline Safety Improvement Act Expired in 2010
- Reauthorization Process began with Congressional hearings
- Draft Bill
- Passed by Senate Subcommittee

PIPES

Pipeline Inspection, Protection, Enforcement, and Safety Act of 2006

December 26, 2006



Regulation Development Regulation Types

- There are two types of regulations that are written for the safety of pipelines.
- They are specification regulations and performance regulations.





Regulation Development Regulation Types

- Specification Regulation
 - The specification regulation has a precise requirement that the operator must follow. An example is the requirement for an operator to install a valve that meets the requirements of American Petroleum Institute (API) Specification 6D, Pipeline Valves.
- The main advantage of a specification regulation is that it is clear what the operator is supposed to do. It is easy to determine what course of action needs to taken or what is required to be done. For the inspectors, there is a uniformity of means of compliance, as every operator has to do the same thing.



Regulation Development Regulation Types

- Specification Regulation
- A disadvantage of a specification regulation is that it does not allow for variations in the environment, operating conditions or physical characteristics of a pipeline. There is also no stated level of safety which the operator is trying to achieve. As materials and technologies change, the regulation may not allow safer materials to be used in the industry, thus requiring unnecessary costs to the operators and their customers.



Regulation Development Regulation Types

Performance Regulation

A performance regulation states what level of safety the operator is to achieve or what the final outcome needs to be. An example would be a situation where, for each cathodic protection system required, a gas pipeline operator must provide a level of cathodic protection that complies with one or more of the applicable criteria contained in Appendix D of Part 192.

An advantage of a performance regulation is that the operator can adapt procedures and processes that fit the individual situation. This means the operator can choose the most economical solution to achieve the required safety. This type of regulation also promotes development of new equipment and technologies.



OPS Regulations

- Since 1970, there have been several areas of regulations written for the pipeline industry.
- To help consolidate the regulations, different Parts have been written covering several different subject matters.



Structure

- The individual Parts governing pipeline safety are written under Title 49 of the Code of Federal Regulations, Parts 190 through 199. When a Part is referenced in a legal document it is typically written as "49 CFR Part 192."
- Not all of the numbers from 190 through 199 have been used, but are reserved for other pipeline safety regulations. Almost every Part is divided into subparts which are designated with an alphabet letter similar to chapters in a book. They are a group of regulations for a specific topic or subject matter. For example, Subpart L of Part 192 covers the regulations for operations of a pipeline system.



Structure

■ Each subpart is broken down into numbered sections and written for a specific topic in that subpart. For example, §192.625 covers the odorization of gas in the operations subpart.

Each section is typically written with paragraphs and subparagraphs to break down the subject more

specifically.





Structure

■ For complete understanding and application of a particular section, the section must be read in its entirety, from start to finish. Several sections have exemptions or other qualifying statements included in the first or last paragraph. If this information is overlooked, and only the middle paragraphs are read, the regulation may be misapplied.





- Part 190; Pipeline Safety Program Procedures This Part describes the enforcement procedures for the federal inspectors and the response options for operators who fall under the jurisdiction of the regional offices. This Part includes procedures for:
- Warning Letters
- Notice of Probable Violations
- Civil Penalties
- Compliance Orders
- Final Orders
- Amendment of Plans or Procedures
- Hazardous Facility Orders





- Part 190; Pipeline Safety Program Procedures This Part describes the enforcement procedures for the federal inspectors and the response options for operators who fall under the jurisdiction of the regional offices. This Part includes procedures for:
- With every enforcement action, the operator needs opportunity to rebut the findings, or due process. In this Part, there are procedures detailing response options for each type of communication, including instructions to request a hearing if wanted.
- Also included in Part 190 are the procedures for developing or revising regulations.



- Part 191; Transportation of Natural and Other Gas by Pipeline; Annual Reports, Incident Reports, and Safety Related Condition Reports This Part describes the reporting requirements for operators of gas systems and Liquefied Natural Gas (LNG) plants. This Part identifies which types of incidents need to be reported to OPS. The regulations include instructions for making a telephonic report of an incident and also includes instructions for making written follow-up reports of the incident.
- Other reports required by this Part are Annual Reports for transmission and distribution systems and Safety-Related Condition Reports.



- Part 192; Transportation of Natural and Other Gas by Pipeline; Minimum Federal Safety Standards

 This Part describes the requirements for operators of gas pipeline systems. Included in this Part are the requirements for almost everything dealing with a gas pipeline, from choosing the materials and components used to build the pipeline, to taking care of the pipeline after it has been placed in service. The subpart topics for Part 192 include:
- General
- Materials
- Pipe Design
- Pipeline Components
- Welding
- Joining Other Than Welding
- Construction of Mains and Transmission Lines
- Construction of Service Lines





- Part 192; Transportation of Natural and Other Gas by Pipeline; Minimum Federal Safety Standards

 This Part describes the requirements for operators of gas pipeline systems. Included in this Part are the requirements for almost everything dealing with a gas pipeline, from choosing the materials and components used to build the pipeline, to taking care of the pipeline after it has been placed in service. The subpart topics for Part 192 include:
- Corrosion Control
- Testing
- Uprating
- Operations
- Maintenance
- Operator Qualification
- Pipeline Integrity Management





Part 193; Liquefied Natural Gas Facilities; Federal Safety Standards

This Part describes the requirements for operators of LNG plants. LNG plants are storage facilities for natural gas that has been cooled to -260°F. At this temperature, natural gas goes into a liquid state. This method has proven to be one of the best ways to store large amounts of natural gas in a small area. When the natural gas is heated, it expands to a volume 600 times the amount of space that it occupied as a liquid, making it easily transported by pipeline. This Part covers everything from the equipment used in the plant to operations, maintenance, and security of the plant itself.



Part 193; Liquefied Natural Gas Facilities; Federal Safety Standards

The subpart topics include:

- Siting Requirements
- Design
- Impoundment Design and Capacity
- LNG Storage Tanks
- Construction
- Equipment
- Control Systems
- Operations
- Maintenance
- Personnel Qualifications and Training





■ Part 194; Response Plans for Onshore Oil Pipelines This Part describes the requirements for oil spill response plans to reduce the environmental impact of oil being discharged from an oil pipeline. Part 194 was developed because of several catastrophic oil spills that damaged the marine environment of the U.S. These spills had extensive environmental impact, including the loss of fish and wildlife. In response to these catastrophic spills, Congress passed the Oil Pollution Act in 1990 (OPA 90) to establish a new national planning and response system. This system includes the development of pipeline response plans. Part 194 contains the regulations for onshore oil pipeline response plans.



- Part 195; Transportation of Hazardous Liquids by Pipeline This Part describes the requirements for operators of a hazardous liquid or carbon dioxide pipeline. Included in this Part are the requirements for almost everything dealing with a liquid pipeline the design, construction, operating and maintenance requirements for a liquid pipeline, as well as the reporting requirements. The subpart topics include:
- Annual, Accident, and Safety-Related Condition Reporting
- Design Requirements
- Construction
- Pressure Testing
- Operations
- Maintenance
- Qualification of Pipeline Personnel
- Corrosion Control





- Part 198; Regulations for Grant-In-Aid State Pipeline Safety Programs
 - This Part describes the requirements for each state to adopt or seek to adopt a one-call prevention program. The purpose for these regulations is to reduce the number of incidents caused by excavation damage to pipelines and other underground facilities. The one-call notification system reduces excavation damage, or "dig-ins" to these facilities.
- The unique aspect of this Part is that it only applies to state governments. These regulations were put into place to help state pipeline safety programs implement qualified one-call systems.





- Part 199; Pipeline Safety Regulations for Drug and Alcohol Testing
 - This Part describes the requirements for alcohol and drug testing of personnel working on pipelines. These regulations are intended to ensure a drug-free work place, and hence, a safer pipeline operating environment.
- These regulations were adopted because workers in all modes of transportation are "responsible for the physical safety of others." The testing of transportation workers for drug abuse is considered by the public as having a positive effect on public safety. Personnel who use drugs can pose dangers to themselves and co-workers, and may cause or worsen events that may take human life, destroy property, and seriously harm the environment.



■ Part 40; Procedures for Transportation Workplace Drug and Alcohol Testing Programs This Part is written by the Department of Health and Human Services under the direction of the Secretary of Transportation. This Part describes the procedures and testing laboratory requirements to be used by modes of transportation which conduct alcohol and drug testing.



Amendments

- As new regulations are developed for pipeline operators through the rulemaking process, these changes are incorporated into the Part in which the change was made. Each document of change is called an amendment. For example, 101 amendments have been made to Part 192 since its original publication date in August of 1970. An amendment may change more than one part, subpart, section, or paragraph, but each part will have its own uniquely-numbered amendment, such as 192-86 or 195-76. As of October, 2005, the various parts have had the following number of amendments:
- Part 190 12 Amendments
 - Part 191 18 Amendments
 - Part 192 101 Amendments
 - Part 193 20 Amendments
 - Part 194 12 Amendments
 - Part 195 84 Amendments
 - Part 198 4 Amendments
 - Part 199 23 Amendments
 - Part 40 14 Amendments



Regulation Development

Since the adoption of the industry standards (ASME B31.8) as the original federal regulations in the late 60's, the development of new regulations for pipelines has been predominantly driven by identified issues that have caused accidents. This does not mean that every new regulation has been written or an existing regulation changed every time there has been a pipeline accident, but often an addition or change of a regulation is attributed directly to a pipeline accident. New regulations may also occur because of changes in technology, new materials, Congressional mandates, etc.

Regulation Development Request

The start of a new regulation or change to an existing regulation comes from a number of different sources. Some have been requested by the pipeline industry itself. This is what happened when Congress passed the original Pipeline Safety Act of 1968 and the industry pushed adoption of the ASME B31.8 Standard. Over the years, the pipeline industry, through individual operators or associations, has requested on many occasions that the regulations be updated or new regulations put into place. OPS itself has developed regulations that it saw that were needed to be updated or added.



Regulation Development Request

■ Most of the new regulations, such as the integrity management initiative, have come from mandates through the PSIA. The recommendations that are submitted to Congress from NTSB are usually included in the PSIA as a mandatory requirement to develop a regulation or to conduct a study for the need of a regulation.





Regulation Development Regulation Need

The first step in the process of developing a regulation is to determine the need for a new regulation. If an operator is having a problem, this does not mean that every operator is having the same problem. The need for a regulation that will affect every operator would not be justified. But if it is determined that several operators are having the same problem, then a new regulation or a change to a regulation may be warranted.





Regulation Development Regulation Need

■ An example of how a regulation has changed from when it was originally adopted is §192.615, which addresses the requirement for an operator to have a written emergency plan. Originally, the regulations simply required the operator to have written procedures with no guidance as to what must be included.



Regulation Development Regulation Need

- Now the regulation requires procedures in several specific areas such as developing a:
- "(3) Prompt and effective response to a notice of each type of emergency, including the following: (i) Gas detected inside or near a building. (ii) Fire located near or directly involving a pipeline facility. (iii) Explosion occurring near or directly involving a pipeline facility. (iv) Natural disaster." Over the years, operators have had several safety issues or problems arise in each of these areas. Thus, the regulation was changed to address them specifically.



Regulation Development Research

- For the development or adoption of each new regulation, OPS must demonstrate that the regulation is: Practicable.
- Designed to meet the need for gas or hazardous liquid pipeline safety, and/or protecting the environment.
- Appropriate and reasonable for the particular type of pipeline transportation or facility.
- Beneficial.
- Cost effective.
- To meet the requirements of developing a regulation, OPS has sponsored research projects to determine if a regulation is going to meet the requirements of the PSIA.
- OPS also sponsors or contributes to research projects to learn about new technologies that can be beneficial to both OPS and the pipeline industry.

• After the need for a regulation has been determined, there are several steps involved in developing the regulation. The critical area is to ensure that there is sufficient information gathered to write and justify the regulation. There are several different ways that OPS gathers information. We just learned that research and development projects are sponsored by OPS. One of the most common ways that OPS seeks and gathers information is through publication of items in the Federal Register. The Federal Register is distributed by the Government Printing Office and is the medium the government uses to communicate with public and industry. Through the Federal Register, there are several different types of requests that can be made.



• An Advanced Notice of Proposed Rulemaking (ANPRM) is used to seek pertinent information about a subject or technology that is related to a requested or mandated new regulation. This type of notice is strictly looking for input when OPS does not have enough information to write or recommend a new regulation.





■ A Notice of Proposed Rulemaking (NPRM) is a formal notice to advise the industry and the public that OPS has enough information on-hand for a new regulation. Included in this notice is a discussion of the need for the new regulation and the wording of what the proposed regulation would be. OPS requests comments on the proposed new regulation or justification why the proposed wording is inappropriate.



(SNPRM) is a notice very similar to a NPRM. After OPS has evaluated comments from a NPRM, if they have made substantial changes to a proposed regulation, they have to reissue those changes for public comment. Since it is not an original NPRM, it is considered a supplement to the NPRM. Some proposed regulations have required the issuance of several SNPRM's



Other forms of information gathering used by OPS are public meetings or hearings. These meetings afford everyone an opportunity to talk face-to-face and to share ideas and issues. These meetings are recorded so the information can be gathered, distributed, and analyzed. OPS has used the public meeting concept quite extensively in recent years on such initiatives as integrity management, operator qualification, and public awareness.



Regulation Development Industry Comments

Whenever OPS requests information, OPS is required to respond to any comments dealing with a new regulation. Whether the comments are in favor of the regulation or against the regulation, the comments must be addressed. There have been cases where ANPRM's were published and based upon the comments from industry and the public, the rulemaking project was cancelled or put on hold. In other cases, based on comments from the ANPRM or NPRM the final regulation looked considerably different from the way it was originally proposed.



Regulation Development Final Rule

The last step in the process for developing a regulation is to publish a Final Rule (FR). This document includes a discussion of the need for the rule, addresses comments to the rulemaking, and often offers guidance on how to comply with the new regulation. This discussion is commonly called the preamble to the FR. It should be noted, however, that the preamble discussion is not an enforceable aspect of the final rule.



Regulation Development Final Rule

■ A Direct Final Rule (DFR) is an additional tool for developing a regulation. However, a DFR is only used when there is an update required to the regulations and it is anticipated that there will be little or no controversy to the regulation being changed.

DEPARTMENT OF TRANSPORTATION

Research and Special Programs Administration

49 CFR Parts 192 and 195 [Docket No. RSPA-98-3783; Amendment 192-86; 195-67]

RIN 2137-AB38

Pipeline Safety: Qualification of Pipeline Personnel

AGENCY: Research and Special Programs Administration (RSPA); Office of Pipeline Safety (OPS).

ACTION: Final rule.



Regulation Development Final Rule

• An example would be updating one of the industry standards which OPS incorporated into the regulation by reference. Industry standards change quite often as new technologies or techniques come into the market place. In certain situations, for an operator to be able to utilize these new technologies, it must be referenced by an industry standard and incorporated into the regulations.



Regulation Development Effective Date

■ Each FR is published with an effective date, the date by which the operator is required to be in compliance with the regulation that has been changed or added. As an inspector, it is important to understand the date on which a rule goes into effect so that an operator is not cited prematurely for noncompliance with the regulation.





Regulation Development Effective Date

Typically, when an inspector conducts an inspection, he or she reviews records for the current year and for the previous years. There have been circumstances where the inspector cited the operator because he failed to comply with a regulation when the regulation was not in effect.

